

## WHAT IS CLAIMED IS:

1. A method for scanning an object to reduce image degradation, said method comprising:

scanning the object in a helical mode using a multi-slice CT imaging system having a plurality of detector arrays arranged along a z-axis direction and a radiation source having a beam focal spot;

wobbling the focal spot of the radiation source in the z-axis direction during said scanning to selectively preferentially illuminate individual said detector arrays through the scanned object for each view;

collecting data from each said detector array for each view only when the detector array from which data is being collected is selectively illuminated.

2. A method in accordance with Claim 1 wherein said wobbling comprises moving a pre-object collimator.

3. A method in accordance with Claim 2 wherein the radiation source is an x-ray tube, and said wobbling comprises dynamically controlling the x-ray tube focal spot.

4. A method in accordance with Claim 3 wherein dynamically controlling the x-ray tube focal spot comprises steering an electron beam to illuminate two focal spots on a cathode of the x-ray tube.

5. A method in accordance with Claim 3 wherein dynamically controlling the x-ray tube focal spot comprises alternately strobing two cathodes in an x-ray tube to illuminate two different focal spots.

6. A method in accordance with Claim 1 wherein said wobbling comprises dynamically controlling the radiation tube focal spot.

7. A method in accordance with Claim 1 wherein said object is a medical patient.

8. A method in accordance with Claim 1 wherein one of said detector arrays arranged in the z-axis direction is a scintillator/photodiode x-ray detector array and another of said detector arrays is a x-ray number and energy detector array.

9. A method for scanning an object to reduce image degradation, said method comprising:

scanning the object in a helical mode using a multi-slice CT imaging system having a plurality of detector arrays arranged along a z-axis direction and a radiation source having a beam focal spot;

wobbling the focal spot of the radiation source in the z-axis direction during said scanning to selectively preferentially illuminate individual said detector arrays through the scanned object for each view;

pulsing the radiation source so that the radiation source is off when the focal spot is wobbled between positions in which individual said detector arrays are selectively preferentially illuminated; and

collecting data from each said detector array for each view only when the detector array from which data is being collected is selectively illuminated.

10. A method in accordance with Claim 9 wherein said wobbling comprises moving a pre-object collimator.

11. A method in accordance with Claim 10 wherein the radiation source is an x-ray tube, and said wobbling comprises dynamically controlling the x-ray tube focal spot.

12. A method in accordance with Claim 9 wherein said wobbling comprises dynamically controlling the radiation tube focal spot.

13. A CT imaging apparatus comprising:

a radiation source on a rotating gantry having a beam focal spot; and

a plurality of detector arrays arranged along a z-axis and configured to detect radiation from said radiation source passing through an object to be imaged;

said CT imaging apparatus configured to:

scan an object in a helical mode;

wobble the focal spot of the radiation source in the z-axis direction during said scanning to selectively preferentially illuminate individual said detector arrays through the scanned object for each view; and

collect data from each said detector array for each view only when the detector array from which data is being collected is selectively illuminated.

14. An apparatus in accordance with Claim 13 further comprising a moveable pre-object collimator, and to wobble the focal spot of the radiation source, said apparatus is configured to move said pre-object collimator.

15. An apparatus in accordance with Claim 14 wherein said radiation source is an x-ray tube, and to wobble the focal spot of the radiation source, said apparatus is further configured to dynamically control the x-ray tube focal spot.

16. An apparatus in accordance with Claim 15 wherein to dynamically control the x-ray tube focal spot, said apparatus is configured to steer an electron beam of the x-ray tube to illuminate two different focal spots on a single cathode.

17. An apparatus in accordance with Claim 15 wherein said x-ray tube comprises two cathodes, and to dynamically control the x-ray tube focal spot, said apparatus is configured to alternately strobe focal spots on the two different cathodes.

18. An apparatus in accordance with Claim 13 wherein to wobble the focal spot of the radiation source, said apparatus is further configured to dynamically control the radiation source focal spot.

19. An apparatus in accordance with Claim 13 further comprising a movable table configured to support a patient between said radiation source and said detector arrays.

20. An apparatus in accordance with Claim 13 wherein one of said detector arrays arranged in the z-axis direction is a scintillator/photodiode x-ray detector array and another of said detector arrays is a x-ray number and energy detector array.

21. A CT imaging apparatus comprising:

a radiation source on a rotating gantry having a beam focal spot; and

a plurality of detector arrays arranged along a z-axis and configured to detect radiation from said radiation source passing through an object to be imaged;

said CT imaging apparatus configured to:

scan an object in a helical mode;

wobble the focal spot of the radiation source in the z-axis direction during said scanning to selectively preferentially illuminate individual said detector arrays through the scanned object for each view;

pulse the radiation source so that the radiation source is off when the focal spot is wobbled between positions in which each of said detector arrays is selectively preferentially illuminated; and

collect data from each said detector array for each view only when the detector array from which data is being collected is selectively illuminated.

22. An apparatus in accordance with Claim 21 further comprising a moveable pre-object collimator, and to wobble the focal spot of the radiation source, said apparatus is configured to move said pre-object collimator.

23. An apparatus in accordance with Claim 22 wherein said radiation source is an x-ray tube, and to wobble the focal spot of the radiation source, said apparatus is further configured to dynamically control the x-ray tube focal spot.

24. An apparatus in accordance with Claim 21 wherein to wobble the focal spot of the radiation source, said apparatus is further configured to dynamically control the radiation source focal spot.